REMARKS

Claims 1, 6-7, 9-11, 13-15, and 17 are pending in this application. Claims 1 and 14 are amended and are independent. Claims 2-5, 8, 12 and 16 have been canceled without prejudice to or disclaimer of the subject matter contained therein.

Reconsideration of this application, as amended, is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 1, 3-7, 9-11, 14 and 15 are rejected as being unpatentable over Applicant's disclosed related art in view of JP 5-323324 to Katsuto. Claims 13 and 17 are rejected over Applicant's disclosed related art in view Katsuto, and further in view of U.S. Patent No. 5,954,999 to Mishina et al. These rejections are respectfully traversed.

While not conceding the appropriateness of the rejections, but merely to expedite the prosecution of the instant application, independent claims 1 and 14 are amended to recite combinations of steps in a method of manufacturing a liquid crystal display, including "forming a liquid crystal cell," which further includes "heating the liquid crystal cell, wherein the heating step is performed at a temperature of about 100°C to about 170°C to form a uniform tilt angle of the alignment layer."

It is respectfully submitted that the combinations of steps recited in independent claims 1 and 14 are not disclosed by or rendered obvious over the applied prior art of record, including Applicant's disclosed related art, Katsuto or Mishina et al.

Applicant's related art teaches an LCD that includes upper and lower substrates, a liquid crystal layer between the two substrates, and upper and lower alignment layers coated on the inner surfaces of the upper and lower substrates, wherein the liquid crystal cell is heated at a temperature higher than a nematic-isotropic transition temperature. As discussed, a problem in the related art is that non-uniform tilt angles occur in the alignment layers, which are caused by a non-uniform temperature distribution during drying and baking, incorrectly performing a rubbing process or the injection of liquid crystal after performing the rubbing process. See the discussion at page 2, line 19, through page 3, line 20, of the present specification. However, Applicant's related art does not teach or suggest "forming a liquid crystal cell," which further includes "heating the liquid crystal cell, wherein the heating step is performed at a temperature of about 100°C to about 170°C to form a uniform tilt angle of the alignment layer," as recited in claims 1 and 14.

The Office Action relies on Katsuto for a teaching of a heating step being performed at a temperature greater than about 10°C above a nematic isotropic

transition temperature as well as the step of quickly cooling the LCD cell. However, Katsuto does not teach or suggest the above-cited limitations of claims 1 and 14, and therefore fails to cure the deficiencies of Applicant's related art.

The Office Action concedes on page 3 that Applicant's related art fails to disclose the heating temperature and the base material for the alignment layer. The Office Action appears to suggest that one of ordinary skill in the art would have used a temperature of 100°C to heat the liquid crystal in a rubbing method or a temperature of greater than 170°C in a lighting method. However, the Office Action does not cite any relevant art which teaches heating a liquid crystal at these temperatures for the stated purposes. Moreover, no explanation is provided as to the relevance of heating a liquid crystal cell in a rubbing or lighting method to heating a liquid crystal cell to form a uniform tilt angle of an alignment layer. Accordingly, Applicant respectfully requests the Examiner to produce one or more references which teach heating a liquid crystal cell at a temperature of about 100°C to about 170°C to form a uniform tilt angle of the alignment layer, as set forth in claims 1 and 14.

In rejecting claims 13 and 17, the Office Action relies on Mishina et al. for a teaching of a baking temperature of the alignment layer which can be selected from a range of from -5°C to 100°C. However, Mishina et al. discloses a reaction temperature for polymerizing the polyimide precursor, in column 4, lines 51-58,

but does not disclose "a baking temperature of the alignment layer," as recited in claims 13 and 17. Furthermore, Mishina et al. does not teach or suggest the above-cited limitations of claims 1 and 14, and therefore fails to cure the deficiencies of Applicant's related art and Katsuto.

In view of the foregoing, reconsideration and withdrawal of the rejections of the claims are respectfully requested. Independent claims 1 and 14 should be in condition for allowance. Since the remaining claims depend either directly or indirectly from allowable independent claims 1 and 14, they should also be allowable for at least the reasons set forth above, as well as for the additional limitations provided by these claims. Accordingly, all pending claims should be in condition for allowance.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Sam Bhattacharya (Reg. No. 48,107) at the telephone number of the undersigned

below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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